

Visual Interfaces for Parallel Simulations (VIPS), Phase I

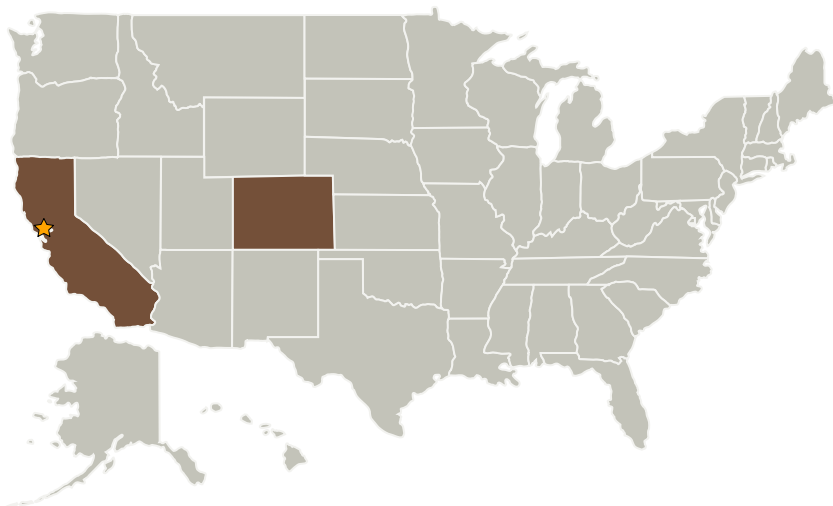
Completed Technology Project (2009 - 2009)



Project Introduction

Configuring the 3D geometry and physics of large scale parallel physics simulations is increasingly complex. Given the investment in time and effort to run these codes, it is crucial that setting up the simulation is done accurately and that rapid iterative cycles of reconfiguring are efficient. During the execution step, learning the proper syntax of commands, getting environment variables correct, writing scripts for the various common batch scheduling systems, locating applications or libraries, and managing directories of files all accumulate to a challenging set of chores. Thus, we propose the Visual Interfaces for Parallel Simulations (VIPS) project to research and develop tools to allow simulation developer to leverage state-of-the-art visualization tools by adding functionality to set up and remotely manage the execution of simulations in addition to viewing 3D output. Transforming visualization application into science studios will result in integrated and intuitive environments, easily customized for the physics simulation. Resulting VIPS Studios can assist users in choosing correct input and free them from the error-prone processes of hand-editing input files and scripts. They will also simplify remote resource organization by abstracting the idea of a scientific run and managing meta data.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Ames Research Center (ARC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★ Ames Research Center(ARC)	Lead Organization	NASA Center	Moffett Field, California
Tech-X Corporation	Supporting Organization	Industry	Boulder, Colorado

Primary U.S. Work Locations	
California	Colorado

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX11 Software, Modeling, Simulation, and Information Processing
 - └ TX11.4 Information Processing
 - └ TX11.4.4 Collaborative Science and Engineering